

October 19, 2001

Mr. James Cook
Duffy Tool & Stamping, L.L.C.
3224 South Meeker Avenue
Muncie, Indiana 47307-0128

Re: Registered Operation Status,
035-13727-00056

Dear Mr. Cook:

The application from Duffy Tool & Stamping, L.L.C., received on January 2, 2001, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following tool and stamping facility and onsite soil and groundwater remediation system, located at 3224 South Meeker Avenue, Muncie, Indiana, is classified as registered:

- (a) Vacuum extraction
- (b) Air stripper with 900 cfm capacity.
- (c) Soil vapor extraction with 350 cfm capacity.
- (d) Eighteen (18) natural gas-fired space heaters with a maximum heat input capacity of 200,000 Btu per hour each.
- (e) Two (2) natural gas-fired space heaters with a maximum heat input capacity of 300,000 Btu per hour each.
- (f) One (1) natural gas-fired evaporator with a maximum heat input capacity of 0.8 million Btu per hour.
- (g) Two (2) cold cleaners degreasing operations, each using a maximum of one (1) gallon per day of Stoddard Solvent.
- (h) One (1) enclosed mechanical blasting operation using glass beads and two bag filters for control.
- (i) One (1) welding operation with a maximum hourly consumption of wire per station of eighteen (18) pounds per hour.

Emission units (d) through (i) were not included in any previous approvals and all of these units are at exemption level.

The following conditions shall be applicable:

- (a) The baghouse shall be run whenever the mechanical blasting unit is in operation.
- (b) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
- (c) Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, the owner or operator shall:
 - (1) Equip the cleaner with a cover;
 - (2) Equip the cleaner with a facility for draining cleaned parts;
 - (3) Close the degreaser cover whenever parts are not being handled in the cleaner;
 - (4) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
 - (5) Provide a permanent, conspicuous label summarizing the operation requirements;
 - (6) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.
- (d) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaner degreaser facility construction of which commenced after July 1, 1990, shall ensure that the following control equipment requirements are met:
 - (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:
 - (A) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));
 - (B) The solvent is agitated; or
 - (C) The solvent is heated.
 - (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under

the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

- (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
 - (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
 - (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
 - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
 - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
 - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller or carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (e) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the owner or operator of a cold cleaning facility construction of which commenced after July 1, 1990, shall ensure that the following operating requirements are met:
- (1) Close the cover whenever articles are not being handled in the degreaser.
 - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
 - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

This registration is a revised registration issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Branch
Office of Air Quality
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by

Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

ERG/AR

cc: File - Delaware County
Delaware County Health Department
Air Compliance - Warren Greiling
Indianapolis Office
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Branch - Karen Nowak

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

Company Name:	Duffy Tool & Stamping, L.L.C.
Address:	3224 South Meeker Avenue
City:	Muncie, Indiana 47307-0128
Authorized individual:	James Cook
Phone #:	(765) 288-1941
Registration #:	035-13727-00056

I hereby certify that Duffy Tool & Stamping, L.L.C. is still in operation and is in compliance with the requirements of Registration 035-13727-00056.

Name (typed):
Title:
Signature:
Date:

October 19, 2001

**Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD) for a Registration

Source Background and Description

Source Name: Duffy Tool & Stamping, L.L.C.
Source Location: 3224 South Meeker Avenue, Muncie, Indiana 47307-0128
County: Delaware
SIC Code: 3449
Operation Permit No.: 035-13727-00056
Permit Reviewer: ERG/AR

The Office of Air Quality (OAQ) has reviewed an application from Duffy Tool & Stamping, L.L.C. relating to the operation of a tool and stamping facility and onsite soil and groundwater remediation system.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) Vacuum extraction
- (b) Air stripper with 900 cfm capacity.
- (c) Soil vapor extraction with 350 cfm capacity.
- (d) Eighteen (18) natural gas-fired space heaters with a maximum heat input capacity of 200,000 Btu per hour each.
- (e) Two (2) natural gas-fired space heaters with a maximum heat input capacity of 300,000 Btu per hour each.
- (f) One (1) natural gas-fired evaporator with a maximum heat input capacity of 0.8 million Btu per hour.
- (g) Two (2) cold cleaners degreasing operations, each using a maximum of one (1) gallon per day of Stoddard Solvent.
- (h) One (1) enclosed mechanical blasting operation using glass beads and two bag filters for control.
- (i) One (1) welding operation with a maximum hourly consumption of wire per station of eighteen (18) pounds per hour.

Emission units (d) through (i) were not included in any previous approvals and all of these units are at exemption level.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

New Emission Units and Pollution Control Equipment Receiving Prior Approval

There are no new construction activities included in this permit.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) CP 035-8623-00056, issued on August 12, 1997
- (b) A 035-9532-00056, issued on February 3, 1999

All conditions from previous approvals were incorporated into this permit.

Air Pollution Control Justification as an Integral Part of the Process (*optional*)

The company has submitted the following justification such that the baghouses be considered as an integral part of the enclosed mechanical blasting process:

- (a) The blasting media is collected and reused.

IDEM, OAQ has evaluated the justifications and agreed that the baghouses will be considered as an integral part of the enclosed mechanical blasting process. Therefore, the permitting level will be determined using the potential to emit after the baghouses. Operating conditions in the proposed permit will specify that these baghouses shall operate at all times when the enclosed mechanical blasting process is in operation.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
SVE-1	soil vapor extraction	15	0.5	350	100
AS-1	air stripper	15	0.5	900	80
SH 1-20	space heaters	20	1	100	180

Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on January 2, 2001, with additional information received on July 30, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 11).

Potential To Emit (of Source or Revision) Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential To Emit (tons/year)
PM	1.0
PM-10	1.0
SO ₂	--
VOC	10.9
CO	1.8
NO _x	2.3

HAP's	Potential To Emit (tons/year)
Trichloroethylene	7.9
TOTAL	9.7

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of criteria pollutants is less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of criteria pollutants is less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-6.1.
- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are greater than levels listed in 326 IAC 2-1.1-3(d)(1), therefore the source is subject to the provisions of 326 IAC 2-5.5.1.
- (d) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (e) This type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2.

County Attainment Status

The source is located in Delaware County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Attainment

Pollutant	Status
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Delaware County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Delaware County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) The degreasing operations are not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Subpart T because halogenated solvents are not used in these degreasing operations.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Delaware County and the potential to emit CO, VOC, NO_x, PM₁₀, and SO₂ is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of an onsite soil and groundwater remediation system will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the enclosed mechanical blasting facility shall be limited to 0.551 pound per hour when operating at a maximum process weight rate of 100 pounds per hour. The pounds per hour limitation was calculated by the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The baghouses shall be in operation at all times the enclosed mechanical blasting facility is in operation, in order to comply with this limit.

326 IAC 8-3-2 (Cold Cleaner Operations)

The degreasing operations were built after January 1, 1980, therefore 326 IAC 8-3-2 applies. The owner or operator of a cold cleaning facility shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control)

The degreasing equipment was built after July 1, 1990 therefore, 326 IAC 8-3-5(a) applies. The owner or operator of a cold cleaner degreaser facility shall ensure that the following control equipment requirements are met:

- (a) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:
 - (1) The solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));
 - (2) The solvent is agitated; or

- (3) The solvent is heated.
- (b) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.
- (c) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
- (d) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
- (e) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
 - (1) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
 - (2) A water cover when solvent is used is insoluble in, and heavier than, water.
 - (3) Other systems of demonstrated equivalent control such as a refrigerated chiller of carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.

326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control)

The degreasing equipment was built after July 1, 1990 therefore, 326 IAC 8-3-5(b) applies. The owner or operator of a cold cleaning facility shall ensure that the following operating requirements are met:

- (a) Close the cover whenever articles are not being handled in the degreaser.
- (b) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
- (c) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

326 IAC 8-3-8 (Material Requirements For Cold Cleaning Degreasers)

This source is not located in Clark, Floyd, or Porter County therefore, 326 IAC 8-3-8 does not apply.

Conclusion

The operation of this tool and stamping facility and onsite soil and groundwater remediation system shall be subject to the conditions of the attached Registration 035-13727-00056.

Appendix A: Emissions Calculations
Welding and Thermal Cutting

Company Name: Duffy Tool & Stamping, L.L.C.
Address City IN Zip: 3224 South Meeker Avenue, Muncie, Indiana 47307
CP: 035-13727
Plt ID: 035-00056
Reviewer: ERG/AR
Date: August 2, 2001

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING												
Submerged Arc				0.036	0.011			0.000	0.000	0.000	0	0.000
Metal Inert Gas (MIG)(carbon steel)	1	18		0.0055	0.0005			0.099	0.009	0.000	0	0.009
Stick (E7018 electrode)	2	0.6		0.0211	0.0009			0.025	0.001	0.000	0	0.001
Tungsten Inert Gas (TIG)(carbon steel)	1	8		0.0055	0.0005			0.044	0.004	0.000	0	0.004
Oxyacetylene(carbon steel)				0.0055	0.0005			0.000	0.000	0.000	0	0.000
FLAME CUTTING	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene				0.1622	0.0005	0.0001	0.0003	0.000	0.000	0.000	0.000	0.000
Oxymethane				0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**				0.0039				0.000	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								0.17				0.01
Potential Emissions lbs/day								4.04				0.34
Potential Emissions tons/year								0.74				0.06

METHODOLOGY

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick

Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)

Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

Welding and other flame cutting emission factors are from an internal training session document.

Refer to AP-42, Chapter 12.19 for additional emission factors for welding.

Appendix A: Emissions Calculations**Natural Gas Combustion Only****MM BTU/HR <100****Evaporator****Company Name: Duffy Tool & Stamping, LLC****Address City IN Zip: 3224 South Meeker Avenue, Muncie, IN 47307****CP: 035-8623****Plt ID: 035-00056****Reviewer: ERG/AR****Date: August 3, 2001**

Heat Input Capacity

MMBtu/hr

Potential Throughput

MMCF/yr

0.8

7.0

Pollutant

Emission Factor in lb/MMCF	PM*	PM10*	SO2	NOx	VOC	CO
				100.0		
	7.6	7.6	0.6	**see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.4	0.0	0.3

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 3 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only**

Page 3 of 11 TSD App A

MM BTU/HR <100

Evaporator

HAPs Emissions

Company Name: Duffy Tool & Stamping, LLC

Address City IN Zip: 3224 South Meeker Avenue, Muncie, IN 47307

CP: 035-8623

Plt ID: 035-00056

Reviewer: ERG/AR

Date: August 3, 2001

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	7.358E-06	4.205E-06	2.628E-04	6.307E-03	1.191E-05

6.593E-03

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.752E-06	3.854E-06	4.906E-06	1.332E-06	7.358E-06

1.920E-05

Methodology is the same as page 2.

Total HAPs (tpy) = 6.613E-03

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations**Natural Gas Combustion Only****MM BTU/HR <100****Space Heaters (18 @ 200,000 Btu/hr)****Company Name: Duffy Tool & Stamping, L.L.C.****Address City IN Zip: 3224 South Meeker Avenue, Muncie, Indiana 47307****CP: 035-13727****Plt ID: 035-00056****Reviewer: ERG/AR****Date: August 6, 2001**Heat Input Capacity
MMBtu/hrPotential Throughput
MMCF/yr

3.6

31.5

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.1	0.1	0.0	1.6	0.1	1.3

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 5 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only**

MM BTU/HR <100

Space Heaters (18 @ 200,000 Btu/hr)

HAPs Emissions

Company Name: Duffy Tool & Stamping, L.L.C.

Address City IN Zip: 3224 South Meeker Avenue, Muncie, Indiana 47307

CP: 035-13727

Plt ID: 035-00056

Reviewer: ERG/AR

Date: August 6, 2001

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	3.311E-05	1.892E-05	1.183E-03	2.838E-02	5.361E-05

2.967E-02

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	7.884E-06	1.734E-05	2.208E-05	5.992E-06	3.311E-05

8.641E-05

Methodology is the same as page 4.

Total HAPs (tpy) = 2.976E-02

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Company Name: Duffy Tool & Stamping, L.L.C.
Address City IN Zip: 3224 South Meeker Avenue, Muncie, Indiana 47307
CP: 035-13727
Plt ID: 035-00056
Reviewer: ERG/AR
Date: August 7, 2001

Bag Filter SB-1

Grain Loading @ Outlet=	0.005 gr/dscf
Air Flow Rate =	500 cfm
1 pound =	7000 grains
1 ton =	2000 pounds
1 year =	8760 hours
1 hour =	60 minutes

PM Emissions =	0.09 tons/yr
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Bag Filter SB-2

Grain Loading =	0.005 gr/dscf
Air Flow Rate =	500 cfm
1 pound =	7000 grains
1 ton =	2000 pounds
1 year =	8760 hours
1 hour =	60 minutes

PM Emissions =	0.09 tons/yr
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Total PM Emissions from SB-1 and SB-2 =	0.19 tons/yr
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Methodology: grain loading*(1lb/7000 grains)*(500cfm)*(60 min/hr)*(8760 hr/yr)*(1 ton/2000 lbs)

Appendix A: Emissions Calculations**Soil Remediation**

Company Name: Duffy Tool & Stamping, LLC
Address City IN Zip: 3224 South Meeker Avenue, Muncie, IN 47307
MSOP: 035-8623
Plt ID: 035-00056
Reviewer: ERG/AR
Date: August 3, 2001

Emissions from Soil Vapor Purging Operation

Pollutant	Influent to stripper (mg/l)	Emission Rate (lbs/hr)	Emission Rate (tons/yr)
Ethylbenzene	0.0010	0.00001	0.00
MEK	0.0023	0.00004	0.00
Tetrachloroethylene	0.0017	0.00003	0.00
Toluene	0.0020	0.00003	0.00
Trichloroethylene	120.0000	1.80140	7.89
Vinyl Chloride	0.4833	0.00730	0.03
Xylenes	0.0057	0.00010	0.00
Chloroethane	0.0033	0.00010	0.00
1,1-dichloroethane	1.3833	0.02080	0.09
1,2-dichloroethane	0.0717	0.00110	0.00
1,1-dichloroethene	0.4500	0.00680	0.03
1,2-dichloroethylene	6.9500	0.10430	0.46
4-methyl, 2-Pentanone	0.4167	0.00630	0.03
1,1,1-Trichloroethane*	8.5000	0.12760	0.56
Total HAPs		2.08	9.09
VOC		1.95	8.53

* Non-photochemical reactive hydrocarbon (not included in the VOC estimates)

Company Name: Duffy Tool & Stamping, L.L.C.
Address City IN Zip: 3224 South Meeker Avenue, Muncie, Indiana 47307
CP: 035-13727
Plt ID: 035-00056
Reviewer: ERG/AR
Date: August 7, 2001

PW-1

Solvent Consumption =	1 gal/day
Solvent Density =	6.57 lb/gal
1 ton =	2000 lbs
1 year =	365 days
VOC Emissions =	1.20 tons/year

PW-2

Solvent Consumption =	1 gal/day
Solvent Density =	6.57 lb/gal
1 ton =	2000 lbs
1 year =	365 days
VOC Emissions =	1.20 tons/year

Total VOC Emissions =	2.40 tons/year
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Methodology:

$(\text{Solvent consumption}) \times (\text{density}) \times (365 \text{ days/year}) \times (1 \text{ ton}/2000 \text{ lbs})$

Note: Since the percent volatile was not found, 100% was assumed.

Appendix A: Emissions Calculations**Natural Gas Combustion Only****MM BTU/HR <100****Space Heaters (2 @ 300,000 Btu/hr)****Company Name: Duffy Tool & Stamping, L.L.C.****Address City IN Zip: 3224 South Meeker Avenue, Muncie, Indiana 47307****CP: 035-13727****Plt ID: 035-00056****Reviewer: ERG/AR****Date: August 6, 2001**Heat Input Capacity
MMBtu/hrPotential Throughput
MMCF/yr

0.6

5.3

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	7.6	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.3	0.0	0.2

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
(SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 10 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only**

Page 10 of 11 TSD App A

MM BTU/HR <100

Space Heaters (2 @ 300,000 Btu/hr)

HAPs Emissions

**Company Name: Duffy Tool & Stamping, L.L.C.
Address City IN Zip: 3224 South Meeker Avenue, Muncie, Indiana 47307
CP: 035-13727
Plt ID: 035-00056
Reviewer: ERG/AR
Date: August 6, 2001**

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03	
Potential Emission in tons/yr	5.519E-06	3.154E-06	1.971E-04	4.730E-03	8.935E-06	4.945E-03

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03	
Potential Emission in tons/yr	1.314E-06	2.891E-06	3.679E-06	9.986E-07	5.519E-06	1.440E-05

Methodology is the same as page 9.

Total HAP (tpy) = 4.960E-03

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations

Fork Lifts

Company Name: Duffy Tool & Stamping, L.L.C.

Address City IN Zip: 3224 South Meeker Avenue, Muncie, Indiana 47307

CP: 035-13727

Plt ID: 035-00056

Reviewer: ERG/AR

Date: August 29, 2001

The seven (7) fork lifts are considered trivial activities under 326 IAC 2-7-1 subdivision (40)(C)(ii).

This states that "Combustion emissions from propulsion of mobile sources" are considered trivial activities.

The seven (7) fork lifts are also considered fugitive emissions, which is defined as "those emission which could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening." This definition was taken from 326 IAC 2-2-1.